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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/089,064 | 04/05/2002 | Arno Lange | 220952USOPCT | 3075 |
| 22850 | 7590 | 03/29/2005 | EXAMINER | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | TOOMER, CEPHIA D | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1714 | |

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/089,064

Applicant(s)

LANGE ET AL.

Examiner

Cephia D. Toomer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10,12-14 and 16-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-10,12-14 and 16-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 04/02/06/02,01/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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DETAILED ACTION

Specification

1. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1, 2, 4, 5, 7-10, 12-14, and 16-19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9, 12-14 and 16-23 of copending Application No. 10/089056. Although the conflicting claims are not identical, they are not patentably distinct from each other because the amines of the present invention have at least one secondary amino function and no primary amino function. The amines of 10/089,056 may be amines having at least one secondary amino function.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 4, 9, 10, 12, 13 and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Colucci (US 5,634,951).

Colucci teaches a detergent/dispersant for use in spark ignition fuels (gasoline) wherein the dispersant is the reaction product of a phenolic compound alkylated with a highly reactive polyisobutene (PIB) with an aldehyde and an amine (see abstract; col. 2, line 64-67; col. 3, lines 1-10). The PIB has a number average molecular weight of from 500 to about 3000 and a polydispersity in the range of 1-4 (see col. 3, lines 11-21). The additive may be prepared as a concentrate containing 12 to about 69-wt % of the additive (see col. 7, lines 65-67).

The amine is preferably an aliphatic diamine having one primary or secondary amino group such as a N,N-dimethyl-1,3-propanediamine (aka 3-(dimethylamino)-n-propylamine)(see col. 3, lines 61-67; col. 4, lines 25-26). The aldehyde may be formaldehyde (see col. 4, lines 37-47).

Colucci does not specifically set forth the adduct mixture of claim 4 or that the adduct mixture contains 1-15 mol% of unreacted PIB-phenols (claim 18). However, the

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mixture of Colucci would inherently meet these limitations because Colucci teaches the same reactants as Applicant.

Accordingly, Colucci teaching all the limitations of the claims anticipates the claims.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-6, 9-10, 12, 14, 16 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Worrel (US 3,413,347) in view of Cherpeck (US 5,300,701) further in view of Baxter (US 6,562,913).

Worrel teaches Mannich reaction products of high molecular weight wherein the products are obtained by reacting a high molecular weight alkylphenol, aldehyde and N,N-dialkyldiamine (see abstract). The alkyl group of the phenol has an average molecular weight of from 550-1400 and is preferably polybutene, which suggest polyisobutene. The aldehyde is preferably formaldehyde and the amine may be N,N-dimethyl-1,3-propanediamine (see col. 1, lines 59-71; col. 3, lines 6-25; col. 4, lines 1-17; Examples). The adduct product is added to lubricating oils in an amount from 0.01 to

about 10 wt % (see col. 6, lines 52-58). Worrel teaches the limitations of the claims other than differences that are discussed below.

In first aspect, Worrel differs from the claims in that he does not specifically teach that alkyl group is highly reactive PIB having more than 70 mol% of vinylidene double bonds (claim 1) a polydispersity from 1.1 to 3.5 (claim 5). However, Cherpeck and Baxter teach this difference.

Cherpeck teaches a process for the preparation of PIB substituted phenolic compound wherein the phenolic compound is alkylated in the presence of an acid catalyst (see abstract). The PIB has a number average molecular weight of 300-500 and contains at least about 70% methylvinylidene (high reactive) (see col. 2, lines 37-49). Cherpeck teaches that these PIB compounds are the commercial product ULTRAVIS-10 (molecular weight 950) (see Example 1).

Baxter teaches that highly reactive PIB such as ULTRAVIS possess a polydispersity of no more than 2.0 (see col. 4, lines 12-29, 54-58).

It would have been obvious to one of ordinary skill in the art to have replaced the polybutene of Worrel with a highly reactive polybutene because Cherpeck teaches that employing such a polybutene provides the desired PIB-phenol in significantly higher yield than employing conventional PIB having minor amounts of methylvinylidene and phenols exhibit minimal molecular weight degradation (see col. 4, lines 19-57).

In the second aspect, Worrel differs from the claims in that he does not specifically teach the adduct mixture of claim 4. However, no unobviousness is seen in this difference because Worrel, Cherpeck and Baxter teach a PIB-substituted phenol

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that appears to meet the claimed limitations and they teach the same amine and aldehyde reactants. Worrel reacts them in the same manner as Applicant. Therefore, it would be reasonable to expect that the adducts of claim 4 would be within the scope of Worrel, Cherpeck and Baxter, absent evidence to the contrary.

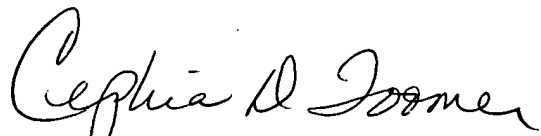
In the third aspect, Worrel fails to teach that the amine and formaldehyde are reacted first to form an adduct which is then reacted with the PIB-phenol (claims 1 and 3). However, no unobviousness is seen in this difference because selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See *In re Gibson*, 5 USPQ 230 (CCPA 1930).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cephia D. Toomer whose telephone number is 571-272-1126. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Cepha D. Toomer
Primary Examiner
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